



VAAGDEVI COLLEGE OF ENGINEERING

(Autonomous)

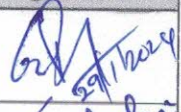
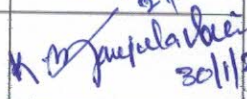


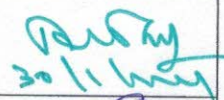



Bollikunta, Khila Warangal (Mandal), Warangal Urban - 506 005 (T.S)

DEPARTMENT OF CIVIL ENGINEERING

MINUTES OF BOARD OF STUDIES MEETING

held on 29.01.2024 at 09:30AM

Members Present

S.No	Name and Address	Designation	Signature
1.	Dr. G. Dineshkumar Associate Professor, Dept. of Civil Engineering, VCE, Warangal.	Chairman	 29/1/2024
2.	Dr. K. Manjula Vani Professor, Dept. of Civil Engineering, JNTUH CEH, Hyderabad.	Member (University Nominee)	 30/1/24
3.	Dr. P. Rathish Kumar Professor, Dept. of Civil Engineering, NIT, Warangal.	Member (Subject Expert)	 29/1/24
4.	Dr. S. Sunil Pratap Reddy Associate Professor, Dept. of Civil Engineering, KITS, Warangal	Member (Subject Expert)	
5.	Er. A. Nagender Rao Superintendent Engineer, R&B Department, Hanamkonda.	Member (Representative from Industry)	 30/1/2024
6.	Dr. K. Thirupathi Rao Professor, Dept. of Civil Engineering, VCE, Warangal.	Member (Faculty)	
7.	Mr. Syed Riyaz Assistant Professor, Dept. of Civil Engineering, VCE, Warangal.	Member (Faculty)	 30/1/24
8.	Er. S. Arun Kumar Assistant Executive Engineer, Mission Bhagiratha SD, Thorrur.	Member (Alumni)	

The following decisions were taken during the Board of Studies meeting,

1. Approved the Course structure and Syllabi of B. Tech – Civil Engineering for III - Year (I & II Semester) and IV - Year (I & II Semester) under R22 - Regulation.
2. Approved the substitute subjects/additional subjects for the students who have been readmitted from R18 regulation to R22 regulation and R20 regulation to R22 regulation.

The chairman of Board of studies thanked all the members for their Suggestions and valuable guidance towards framing of Course Structure and Syllabi under R22 Regulation.


Chairman/BoS

CHAIRMAN

Board of Studies, Civil Engg, Dept.
VAAGDEVI COLLEGE OF ENGINEERING, W
Bollikunta, Warangal (T.S)-506 005

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
B.Tech. in CIVIL ENGINEERING
COURSE STRUCTURE - (R22 Regulations) - III & IV YEAR
Applicable from Academic Year 2022-2023 admitted batch

III YEAR I - SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1.		Structural Analysis - II	3	0	0	3
2.		Geotechnical Engineering	3	0	0	3
3.		Structural Engineering -I (RCC)	3	0	0	3
4.		Business Economics & Financial Analysis	3	0	0	3
5.		Transportation Engineering	3	0	0	3
6.		Hydrology and Water Resources Engineering	3	0	0	3
7.		Transportation Engineering Laboratory	0	0	2	1
8.		Geotechnical Engineering Laboratory	0	0	2	1
9.		Intellectual Property Rights	3	0	0	0
		Total Credits	21	0	4	20

III YEAR II - SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1.		Environmental Engineering	3	0	0	3
2.		Foundation Engineering	3	0	0	3
3.		Structural Engineering -II (Steel Structures)	3	0	0	3
4.		Professional Elective – I 1. Design of Hydraulic Structures 2. Advanced Water Resources Engineering 3. Ground Water Hydrology	3	0	0	3
5.		Open Elective - I	3	0	0	3
6.		Environmental Engineering Laboratory	0	0	2	1
7.		Computer Aided Design Laboratory	0	0	2	1
8.		Advanced English Communication Skills Laboratory	0	0	2	1
9.		Industry Oriented Mini Project / Internship	0	0	4	2
10.		Environmental Science	3	0	0	0
		Total Credits	18	0	10	20

* Environmental Science in III Year II Semester should be Registered by Lateral Entry Students Only.

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IV YEAR I - SEMESTER

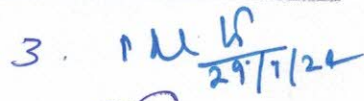
S. No.	Course Code	Course Title	L	T	P	Credits
1.		Quantity Survey & Valuation	2	0	0	2
2.		Project Management	2	0	0	2
3.		Professional Elective – II 1. Prestressed Concrete 2. Earth Retaining Structures 3. Repair and Rehabilitation of Structures	3	0	0	3
4.		Professional Elective – III 1. Design of Bridges 2. Elements of Earthquake Engineering 3. Ground Improvement Techniques	3	0	0	3
5.		Professional Elective – IV 1. Building Information Modelling 2. Green Building Technologies 3. Remote Sensing & Geographical Information System	3	0	0	3
6.		Open Elective - II	3	0	0	3
7.		Civil Engineering Software Laboratory	0	0	2	1
8.		Project Stage - I	0	0	6	3
		Total Credits	16	0	8	20


IV YEAR II - SEMESTER


S. No.	Course Code	Course Title	L	T	P	Credits
1.		Professional Elective – V 1. Solid Waste Management 2. Smart Cities Planning and Management 3. Air pollution	3	0	0	3
2.		Professional Elective – VI 1. Airports, Railways and Waterways 2. Pavement Analysis & Design 3. Pavement Asset Management	3	0	0	3
3.		Open Elective - III	3	0	0	3
4.		Project Stage – II including seminar	0	0	22	11
		Total Credits	9	0	22	20


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OPEN ELECTIVES OFFERED BY THE DEPARTMENT

S. No.	Course Code	Course Title	L	T	P	Credits
1.		Disaster Preparedness & Planning Management	3	0	0	3
2.		Building Technology	3	0	0	3
3.		Environmental Impact Assessment	3	0	0	3
4.		Sustainable Infrastructure Development	3	0	0	3
5.		Environmental Pollution and Control	3	0	0	3
6.		Energy Efficient Buildings	3	0	0	3

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VAAGDEVI COLLEGE OF ENGINEERING

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TRANSPORTATION ENGINEERING LABORATORY

B.Tech - III Year I – Semester

L	T	P	C
0	0	2	1

Course Objectives:

- To provide knowledge on test of aggregates
- Impart properties of bitumen by various tests
- To understand Mix Design of sub base and bituminous layer
- To gain knowledge on different Traffic Surveys

LIST OF EXPERIMENTS

Tests on aggregate

1. Shape Test - Flakiness and Elongation Index
2. Los Angeles Abrasion Test
3. Los Angeles Attrition Test

Tests on bitumen

4. Penetration and Softening Point
5. Ductility Value
6. Flash and Fire Point

Mix design

7. Marshall's Stability sample preparation and Testing

Traffic Surveys

8. Volume studies at Mid blocks and Intersection
9. Speed Studies using Spot speeds
10. Parking studies

Course Outcomes: At the end of this course, the students will able to:

CO1: Acquire skills in testing the aggregates

CO2: Know the procedure to design bituminous roads.

CO3: Measure the physical properties of bitumen for their suitability as road material.

CO4: Analyze the traffic based on traffic surveys.

REFERENCE BOOKS:

1. Khanna, S.K., Justo, C.E.G and Veeraragavan, A; 'Highway Engineering', Nem Chand & Bros, 10th Edition, 2017
2. Srinivasa Kumar, R, Textbook of Highway Engineering, Universities Press, First Edition 2011.
3. Kadiyalai, L.R., 'Traffic Engineering and Transport Planning', Khanna Publishers, First Edition, 1999


IS CODES:

- IS 1201 -1220 (1978) "Methods for testing tars and bituminous materials"
- IRC SP 53 -2010 "Guidelines on use of modified bitumen"
- MS-2 Manual for Marshalls Mix design 2002

Online Resources:

1. <https://ts-nitk.vlabs.ac.in/transportation-engineering/>

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GEOTECHNICAL ENGINEERING LABORATORY

B.Tech - III Year I – Semester

L	T	P	C
0	0	2	1

Course Objectives:

- To find out the method and practices of testing properties of the soil
- To learn the principles of permeability of soil
- To study the procedures of testing shear strength parameters of soil
- To obtain compression test on soil.

LIST OF EXPERIMENTS

1. Atterberg Limits (Liquid Limit, Plastic Limit, and shrinkage limit)
2. a) Field density by core cutter method and
b) Field density by sand replacement method
3. Determination of Specific gravity of soil Grain size distribution by sieve analysis
4. Permeability of soil by constant and variable head test methods
5. Standard Proctor's Compaction Test
6. Determination of Coefficient of consolidation (square root time fitting method)
7. Unconfined compression test
8. Direct shear test
9. Vane shear test
10. Differential free swell index (DFSI) test

Course Outcomes: At the end of this course, the students will able to:


- CO1: Identify and classify soils with reference to their characteristics
- CO2: Learn about grain size distribution using sieve analysis
- CO3: Calculate the permeability value of the soil
- CO4: Determine the shear strength properties of the soil


REFERENCE BOOKS:

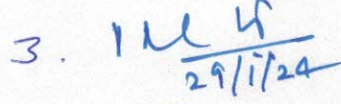
1. Murthy, V.N.S., "Soil Mechanics and Foundation Engineering", CBS Publishers Distribution Ltd., First Edition, 2018
2. Gopal Ranjan and Rao, A.S.R., "Basic and Applied Soil Mechanics", New Age Ltd. International Publisher, 3rd Edition, 2019.
3. Punmia, B.C., Ashok Kumar Jain and Arun Kumar Jain "Soil Mechanics and Foundations", Laxmi Publications Pvt. Ltd. New Delhi, 17th Edition 2019.


Online Resources:


1. <https://smfe-iiith.vlabs.ac.in/>
2. <https://nptel.ac.in/courses/105/101/105101160/>


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ENVIRONMENTAL ENGINEERING LABORATORY

B.Tech - III Year II – Semester

L	T	P	C
0	0	2	1

Course Objectives:

- To conduct test on determination of water standards
- To understand the procedure of determining various parameters of water
- To impart knowledge on evaluating chloride content
- To attain knowledge of B.O.D and C.O.D determination

LIST OF EXPERIMENTS

1. Determination of pH
2. Determination of Electrical Conductivity
3. Determination of Acidity
4. Determination of Alkalinity
5. Determination of Total Hardness
6. Determination of Chlorides
7. Determination of optimum coagulant Dosage
8. Determination of Dissolved Oxygen
9. Determination of COD
10. Determination of BOD

Course Outcomes: On completion of the course, the students will be able to:

CO1: Test water to determine pH and conductivity

CO2: Estimate quality of water

CO3: Determine chloride content in water


CO4: Determine BOD and COD of water


REFERENCE BOOKS:

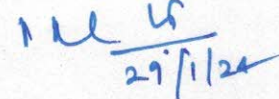
1. Howard S. Peavy, Donald R. Rowe and George Tchobanoglous, "Environmental Engineering", McGraw Hill, First Edition 2017
2. Duggal, K. N., Elements of Environmental Engineering, S. Chand & Co., 3rd Edition, 2008.


Online Resources:


1. <https://ee1-nitk.vlabs.ac.in/List%20of%20experiments.html>


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COMPUTER AIDED DESIGN LABORATORY

B.Tech - III Year II – Semester

L	T	P	C
0	0	2	1

Course Objectives:

- Learn the usage of any fundamental software for design
- Create geometries using pre-processor
- Analyze and Interpret the results using post processor
- Design the structural elements

LIST OF EXPERIMENTS

1. Analysis & Design determinate beams using a software
2. Analysis & Design of fixed beam using a software
3. Analysis & Design of Plane Frames
4. Analysis & Design of space frames
5. Analysis & Design of residential building
6. Analysis & Design of Roof Trusses
7. Design and detailing of built up steel beam
8. Developing an excel template for foundation design
9. Detailing of RCC beam and RCC slab
10. Detailing of RCC column and RCC footing

Course Outcomes: On completion of the course, the students will be able to:

CO1: Analyse and design the beams and frames

CO2: Design the building under all loading conditions

CO3: Analyse the roof truss and built up steel beams

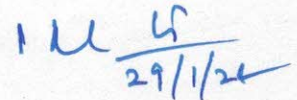
CO4: Draw the detailing of beam, slab, Column and Footing.

REFERENCE BOOKS

1. B.C. Punmia, Ashok K. Jain and Arun K. Jain, "Limit State design of Reinforced Concrete", Laxmi Publications (P) Ltd., 2nd Edition, 2016
2. Unnikrishnan Pillai and Devdas Menon, "Reinforced Concrete Design", Tata McGraw Hill Publishing Company Ltd., 3rd Edition, 2017
3. N. Krishnaraju, "Design of Reinforced Concrete Structures, IS: 456-2000", CBS Publications, 4th Edition, 2019

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CIVIL ENGINEERING SOFTWARE LABORATORY

B.Tech - IV Year I – Semester

L	T	P	C
0	0	2	1

Pre-Requisites: Structural Engineering - I & II

Course Objectives:

- Learn the usage of software for analysis and design
- Estimate the Multi storey buildings using excel template
- Analyze and Interpret the results using post processor
- Design the structural elements

LIST OF EXPERIMENTS

1. Three dimensional modelling of a building using software.
2. Rendering of buildings using software.
3. Planning and Estimation of Multi-storey buildings and development of Excel Template.
4. Digitization of Maps using software.
5. Creation of Thematic Maps using software.
6. Analysis of continuous Beams
7. Analysis and Design of Multi storey Buildings
8. Analysis of steel framed structure.
9. Demonstration to Analysis of different types of Bridge structures.
10. Demonstration to Finite Element Analysis software.

Note : Open/education/academic version of software can be used.

Course Outcomes: On completion of the course, the students will be able to:

CO1: Analyse the beams and framed structure

CO2: Analyse the building under all loading conditions

CO3: Analyse the steel frame structures

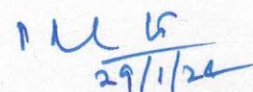
CO4: Acquire knowledge on finite element analysis software.


REFERENCE BOOKS

1. B.C. Punmia, Ashok K. Jain and Arun K. Jain, "Limit State design of Reinforced Concrete", Laxmi Publications (P) Ltd., 2nd Edition, 2016
2. Unnikrishnan Pillai and Devdas Menon, "Reinforced Concrete Design", Tata McGraw Hill Publishing Company Ltd., 3rd Edition, 2017
3. Datta B.N. Estimating and Costing, Charator Publishing House, 28th Revised Edition, 2016

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